

MULTIMEDIA



UNIVERSITY

STUDENT ID NO

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MULTIMEDIA UNIVERSITY

FINAL EXAMINATION

TRIMESTER 2, 2015/2016

DPA5018 – PROGRAMMING FOR BUSINESS APPLICATIONS (DIT & DBIS)

2 MARCH 2016
9:00 a.m – 11:00 a.m
(2 Hours)

INSTRUCTIONS TO STUDENTS

1. This question paper consists of **NINE (9)** pages excluding the cover page.
2. There are **FOUR (4)** sections, attempt **ALL** questions.
3. Answer **ALL** questions in the Answer Booklet provided.

Section A: Multiple Choice Questions (Total: 10 Marks)

Instruction: Choose the best answer. Write your answers in the Answer Booklet provided.

1. _____ is a set of instruction that directs a computer to perform specific operations.
A. Hardware
B. Software
C. Pseudocode
D. Algorithm
2. The _____ structure is the construct where statements can be executed or skipped depending on whether a condition evaluates to true or false.
A. sequence
B. skipped
C. selection
D. repetition
3. Which of the following are **TRUE** about forms and controls in Visual Basic?
I. They are graphical objects.
II. Buttons can be created with drag and drop method.
III. They are pre-built.
IV. Controls cannot be removed once placed into a form.
A. I and II
B. I, II, and III
C. I, II, and IV
D. All of the above
4. A(n) _____ property of a control determines the order in which controls receive the focus during tabbing.
A. tabIndex
B. tabStop
C. indexNum
D. TextAlign
5. What will be displayed by the textbox txtDisplay after the execution of the statements below?

```
Dim num1 As Double = 5.2  
Dim num2 As Double = 4.0  
num2 = CInt(num1 * 2)  
txtDisplay.Text = num2
```


A. 4.0
B. 8
C. 10.4
D. 10
6. Given variable declarations as below, which of the conditional statements returns **TRUE**?

```
Dim num1 As Double = 5.2  
Dim num2 As Double = 4.0  
Dim bool As Boolean = False
```

Continued.....

- A. (num1 + num2 > 10) Or (num1 > 10)
B. (num1 + num2 > 10) And (num1 > 10)
C. (num1 + num2 > 10) And (Not bool)
D. (num1 + num2 > 10) Or (Not bool)
7. What happens when a parameter in a procedure is declared ByRef?
- A. A value of the argument is passed to the procedure.
B. The same memory location as the argument is passed to the procedure.
C. Only arguments of numeric data types are allowed.
D. All variables are reset to NULL.
8. Which of the following are **TRUE** about loop statements?
- I. Used to repeat a sequence of statements a number of times.
II. Repeats a sequence of statements either as long as or until a certain condition is true.
III. For each iteration, a loop counter variable can only be increased by 1.
IV. A "For" loop structure must be paired with an "End For".
- A. I and II
B. I, II, and III
C. I, II, and IV
D. All of the above
9. Given statements as below, what will be the value of data(5)?
- ```
Dim data(), str As String
str = "The quick brown fox jumps over the lazy dog"
data = str.Split(" ")
```
- A. jumps  
B. over  
C. The quick brown fox jumps  
D. jumps over the lazy dog
10. Which of the following is a valid statement to display a dialog box that prompts the user to open a file?
- A. openFileDialog1.Display()  
B. openFileDialog1.ShowDialog()  
C. openFileDialog1.Show()  
D. openFileDialog1.Open()

Continued.....

**Section B: True/False Questions (Total: 10 Marks)**

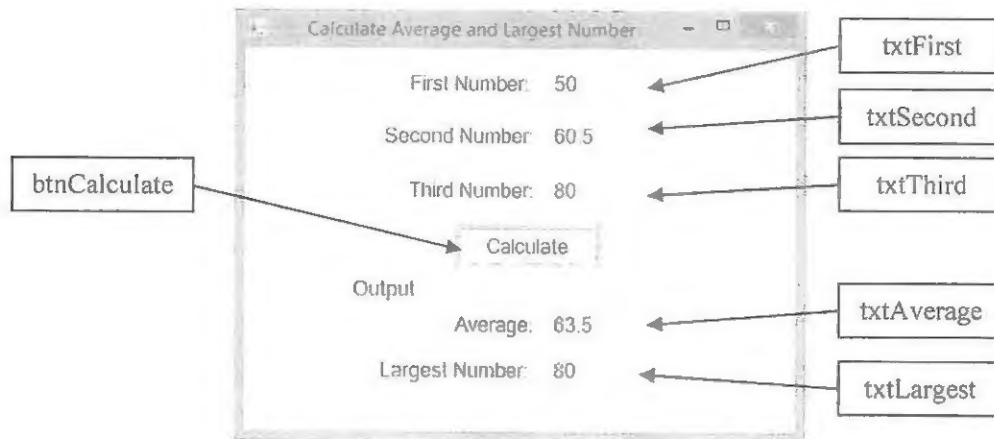
*Instruction: Answer T for TRUE and F for FALSE statements. Write your answers in the Answer Booklet provided.*

1. A `ForeColor` property is used to change the background color of a control.
2. Variables of type `Double` can be assigned both whole numbers and decimal numbers.
3. Variables declared outside an event procedure are said to have class-level scope and are available to every event procedure.
4. `Select Case` choices are determined by the value of a single expression called a selector.
5. A `Sub` procedure can be used when you want to return one and only one value.
6. The value of the counter variable in a `For` loop can be altered within the body of the loop.
7. The data type of the elements in the listbox array `lstBox.Items()` is an `Object`.
8. A table is a rectangular array of data. Each column of the table which contains the same type of information is called a field.
9. A statement `ReDim Preserve arrayName(n)` is used to preserve the data in the existing array when the size of an array is changed.
10. The value of `EndOfStream` during file reading will return true after the entire file has been read.

Continued.....

**Section C: Structured Questions (Total: 30 Marks)***Instruction: Answer ALL questions in the Answer Booklet provided.***QUESTION 1****[10 Marks]**

- a. Write a button click event procedure to calculate the average and the largest number inserted by the user based on Figure 1. (5 Marks)

*(Hints: Data type conversion from "text" to "double" is necessary.)***Figure 1**

```
Private Sub btnCalculate_Click() Handles btnCalculate.Click
 ...
 ...
 ...
End Sub
```

- b. Given the sample code as below, determine the output displayed by the list box lstOutput. (2 Marks)

```
Dim num1 As Integer = 5, result As Integer
Dim num2 As Double = 3.7
Dim str As String = "I am Bond "
str &= "Richard Bond"
result = num1 + num2

lstOutput.Items.Add(str)
lstOutput.Items.Add(6 > 7)
lstOutput.Items.Add(num1 Mod 2)
lstOutput.Items.Add(result)
```

**Continued.....**

- c. Identify **THREE (3)** syntax errors in the code given below. Write the number of line of errors found and correct the statements. (3 Marks)

| Line |                          |
|------|--------------------------|
| 1.   | Dim Age Integer          |
| 2.   | Age = 28                 |
| 3.   | Select Case              |
| 4.   | Case 0 To 18             |
| 5.   | MsgBox("Teen")           |
| 6.   | Case 18 To 55            |
| 7.   | MsgBox("Adult")          |
| 8.   | Case > 55                |
| 9.   | MsgBox("Senior")         |
| 10.  | Else                     |
| 11.  | MsgBox("Invalid number") |
| 12.  | End Select               |

Example:

Line 1: Dim Age As Integer

## QUESTION 2

[10 Marks]

- a. Given a button clicked event procedure as below, write a function `cal_perimeter(...)` which calculates the total perimeter of a right triangle (Figure 2). The function carries two parameters which are the length of two sides (a and b). (4 Marks)

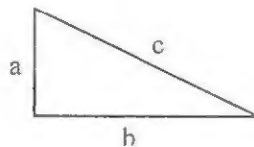


Figure 2

```
Private Sub btnCalculate_Click() Handles btnCalculate.Click
 Dim a As Double = Cdbl(txtA.Text)
 Dim b As Double = Cdbl(txtB.Text)

 txtPerimeter.Text = cal_perimeter(a, b)
End Sub
```

(Hints: Formula to find length of c,  $c = \sqrt{a^2 + b^2}$ .)

- b. Write a Visual Basic program that keeps prompting user for an amount of price by using an input box (refers to Figure 3). The loop is stopped when user entered a value of -1. Then, a total of the price is shown using a message box (Figure 4). (6 Marks)

Continued.....



Figure 3



Figure 4

**QUESTION 3****[10 Marks]**

- a. Give **THREE (3)** examples of Database Management System. (3 Marks)
- b. Write a program to count the number of people whose height is greater than 160cm by following the instructions below: (7 Marks)
- Declare and initialize an array height with values of 157, 163, 183, 176, 155, 169, and 159.
  - Call a function named `compute_height()` by passing the array height as a parameter.
    - This function counts the number of people whose height stored in the array that is greater than 160cm.
    - The counted value is returned.
  - Displays the number of people that is greater than 160cm by using a message box as shown in Figure 5.



Figure 5

Continued.....

**Section D: Application Question (Total: 30 marks)****Instruction: Answer the question in the Answer Booklet provided.**

The following is a ticketing system which allows customers to purchase the entrance ticket for ABC theme park. There are two types of ticket; normal ticket and gold ticket with price of RM 25.00 and RM 40.00 during weekday, respectively. However, the price of the ticket increases 10% during weekends and 20% during public holidays. All children are entitled for a 50% discount from the price of adult. The ticket price is shown in Table 1.

Table 1

|                             | Normal Ticket (Adult)             | Gold Ticket (Adult) |
|-----------------------------|-----------------------------------|---------------------|
| Weekday                     | RM 25.00                          | RM 40.00            |
| Weekend                     | 10% rise based on weekday's price |                     |
| Holiday                     | 20% rise based on weekday's price |                     |
| *50% discount for children. |                                   |                     |

Besides, customers may choose to include or not to include lunch in their tickets with extra charges of RM10 per person.

The screenshot shows a Windows-style application titled "Theme Park Ticketing System". On the left, there are input controls: a text box for "txtName", a text box for "txtAdult", a text box for "txtChildren", a radio button group for "Ticket Type" (Normal Ticket, Gold Ticket), a radio button group for "Days" (Weekday, Weekend, Holiday), and a radio button group for "Lunch" (Yes, No). Below these is another radio button group for "Lunch" (Yes, No). A "Calculate" button is at the bottom center. On the right, a display area shows the results of a calculation. The display area has a title bar "Theme Park Ticketing System" and a "Calculate" button. The display area shows the following text:

WELCOME TO ABC THEME PARK

Customer Name: Newlon Watson

No. of Adults: 5

No. of Children: 2

Total Head Count: 7

TOTAL PRICE OF TICKET:

Adults: RM 137.5 (RM 27.5 per pax)

Children: RM 27.5 (RM 13.75 per pax)

TOTAL LUNCH:

Lunch: RM 70 (RM 10 x 7 pax)

TOTAL: RM 235

Figure 6

Perform the following tasks by referring to the sample output in Figure 6, with each name of the controls labelled accordingly.

- a. Write the following functions as shown in Table 2 below. (17 Marks)

Continued.....



Table 2

| No.  | Function Name       | Description                                                                                                                                                                                                                                                                |
|------|---------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| i)   | getNoAdults         | <ul style="list-style-type: none"> <li>Gets the number of adults from txtAdult.</li> <li><b>Return:</b> integer number of adults</li> </ul>                                                                                                                                |
| ii)  | getNoChildren       | <ul style="list-style-type: none"> <li>Gets the number of children from txtChildren.</li> <li><b>Return:</b> integer number of children</li> </ul>                                                                                                                         |
| iii) | getTotalHeadCount   | <ul style="list-style-type: none"> <li>Gets the total number of persons including adults and children</li> <li><b>Return:</b> Integer number of total number of persons</li> </ul>                                                                                         |
| iv)  | getTicketPrice      | <ul style="list-style-type: none"> <li>Gets the price of ticket based on selection of type of ticket (rdoNormal and rdoGold)</li> <li><b>Return:</b> price of ticket selected (refers to Table 1)</li> </ul>                                                               |
| v)   | getPriceRisePercent | <ul style="list-style-type: none"> <li>Gets the rate of ticket price rise based on selection of days (rdoWeekday, rdoWeekend and rdoHoliday)</li> <li><b>Return:</b> rate of ticket price rise (<i>returns 1 for weekday, 1.1 for weekend, 1.2 for holiday</i>)</li> </ul> |
| vi)  | getLunchPrice       | <ul style="list-style-type: none"> <li>Gets the price of lunch based on selection of lunch (rdoLunchYes and rdoLunchNo)</li> <li><b>Return:</b> Price of charges for lunch (<i>RM 10 for 'yes'; RM 0.00 otherwise</i>)</li> </ul>                                          |

b. Below is a button clicked event procedure of button named btnCalculate.

```

Private Sub btnCalculate_Click() Handles btnCalculate.Click
 Dim priceAdult As Double = 0
 Dim priceChildren As Double = 0
 Dim totalPriceAdult As Double = 0
 Dim totalPriceChildren As Double = 0
 Dim totalLunchPrice As Double = 0
 Dim total As Double = 0

 (i)

 display(priceAdult, priceChildren, totalPriceAdult, _
totalPriceChildren, totalLunchPrice, total)

End Sub

```

- i. Complete the statements to assign a value to each declared variable based on Table 3. You may need to use the functions in question (a). (5 Marks)

Continued.....

Table 3

| Variable Name      | Description                                                                       |
|--------------------|-----------------------------------------------------------------------------------|
| priceChildren      | Price of ticket of a child                                                        |
| totalPriceAdult    | Total price of ticket of adults                                                   |
| totalPriceChildren | Total price of ticket of children                                                 |
| totalLunchPrice    | Total of lunch price charged based on the number of persons (adults and children) |
| total              | Total of price including tickets and lunch (if any)                               |

*Example:*

| Variable Name | Description                 |
|---------------|-----------------------------|
| priceAdult    | Price of ticket of an adult |

**Answer:**  
`priceAdult = getTicketPrice() * getPriceRisePercent()`

- ii. Write a sub procedure `display(...)` that display the details of tickets purchased in the list box `lstDisplay` as shown in Figure 7. (8 Marks)

|                                       |
|---------------------------------------|
| WELCOME TO ABC THEME PARK             |
| Customer Name : Newton Watson         |
| No. of Adults : 5                     |
| No. of Children : 2                   |
| Total Head Count : 7                  |
| TOTAL PRICE OF TICKET :               |
| Adults : RM 137.5 (RM 27.5 per pax)   |
| Children : RM 27.5 (RM 13.75 per pax) |
| TOTAL LUNCH :                         |
| Lunch : RM 70 (RM 10 x 7 pax)         |
| TOTAL : RM 235                        |

Figure 7

**End of Page.**